

Notes on the genus *Geogepa* (Lepidoptera, Tortricidae) from Japan, with description of a new species

Utsugi JINBO

Department of Natural History, Graduate School of Science, Tokyo Metropolitan University,
Minami-Ohsawa 1-1, Hachioji-shi, Tokyo, 192-0397 Japan; e-mail: ujinbo@comp.metro-u.ac.jp

Abstract Japanese species of the genus *Geogepa* are reviewed. A new species *Geogepa monticola* is described based on specimens collected in subalpine forests of central Honshu, Japan. The species is very closely related to *G. stenochorda* (Diakonoff, 1948).

Key words *Geogepa stenochorda*, *Geogepa monticola* sp. n., subalpine regions, Honshu, Archipini, taxonomy.

The genus *Geogepa* Razowski, 1977 is a small genus of Tortricinae. This genus was based on a Chinese species, *G. zeuxidia* Razowski, 1977, and was defined by a swollen median portion of the ductus bursae in the female genitalia. The genus has been placed in a primitive group of Archipini and has been presumed to be one of the genera allied to *Gnorismoneura* Issiki & Stringer, 1932 (Razowski, 1977; Jinbo, 2000). Six species of *Geogepa* have hitherto been known mainly from the Oriental Region. In Japan, only one species, *G. stenochorda* (Diakonoff, 1948), has been recorded.

In the course of my taxonomic study on the Archipini, I found another species of *Geogepa* in the subalpine regions of Honshu, Japan. The species is very similar to *G. stenochorda*, but is a new taxon clearly distinguished from the latter by wing markings and genitalia. The purpose of this paper is to describe the new species and to provide diagnoses of the two Japanese species of the genus.

Geogepa stenochorda (Diakonoff, 1948) (Figs 1–2, 5, 7, 9)

Epagoge stenochorda Diakonoff, 1948: 267, fig. 1; Yasuda, 1975: 142, figs 115, 441, 613.

Batodes stenochorda: Obraztsov, 1955: 226.

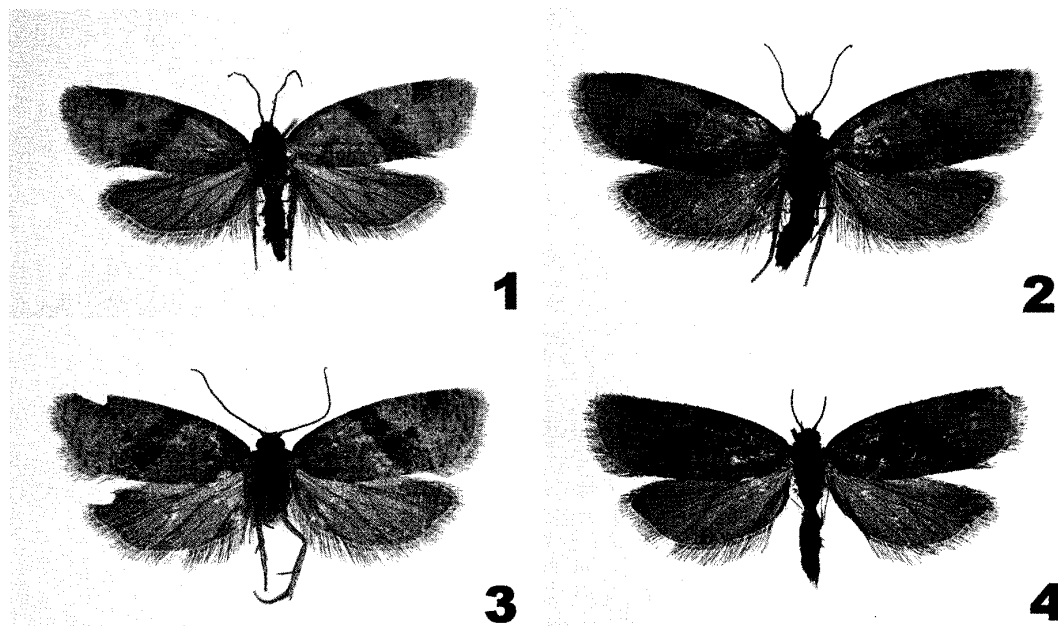
Heterochorista stenochorda: Kawabe, 1968: 127, figs 1–4.

Geogepa stenochorda: Razowski, 1977: 326, figs 8, 9, 14; Kawabe, 1982, **1**: 161, **2**: 75, pl. 17, fig. 26; Razowski, 1993: 672; Kuznetsov, 2001: 192, fig. 115-1; Liu & Li, 2002: 219, pl. 31, fig. 298, pl. 77, fig. 298, pl. 117, fig. 298; Oku, 2003: 87.

Epagoge pedaliota: Issiki, 1957: 75, pl. 12, fig. 377, *nec* Meyrick, 1936.

Diagnosis. Rather small species of Archipini, characterized by a slender and light ochreous forewing, with a narrow bronze median fascia and a distinct blackish discal spot. This species is very similar to a Taiwanese species, *G. promiscua* Razowski, 1977, but can be distinguished from the latter by the shorter forewing, and the club-shaped uncus of the male genitalia. Forewing length 5.5–7.5 mm in male, 7.0–8.5 mm in female.

Material examined. Yamagata: Torihara-goya, 1,350 m, Asahi Range, 1 ♂, 8. VIII. 1999, U. Jinbo. Tochigi: Shiobara-onsen, Shiobara-machi, 4 ♂ 1 ♀, 23–24. VI. 2001, U. Jinbo. Tokyo: Mitake, Ōme-shi, 1 ♂, 20. VI. 1998, U. Jinbo. Kanagawa: Jakotsuno, Hakone-chō, 1 ♂, 15. VI. 1983, T. Maenami; Komagatake-noboriguchi, Hakone-chō, 1 ♂, 17. VII. 1983, H. Nakajima; Kamiyu-onsen, Hakone-chō, 4 ♀, 2. VII. 1988, H. Nakajima. Niigata: Ōshirakawa, Irihirose-Mura, 5 ♀, 27. VI. 1998, U. Jinbo; Moeginosato, Nakauonuma, 1 ♂,



Figs 1–4. Adults of *Geogepa* spp. from Japan. 1. *Geogepa stenochorda*, ♂. 2. Ditto, ♀. 3. *Geogepa monticola* sp. n., ♂, holotype. 4. Ditto, ♀, paratype.

11. VI. 1994, K. Jinbo. Yamanashi: Matsuhime-tôge, Ôtsuki-shi, ♂, 23. VI. 2002, U. Jinbo; Magarizawa, Yamato-mura, 1 ♂, 28. V. 2002, U. Jinbo; Sagashio, Enzan-shi, 2 ♂ 4 ♀, 15. VI. 2002, U. Jinbo. Shizuoka: Orokubo, Nakakawane-chô, 2 ♀, 17. VI. 1995, U. Jinbo.

Distribution. Japan (Hokkaido, Honshu, Shikoku, Kyushu) and China (Anhui).

Hosts. Unknown.

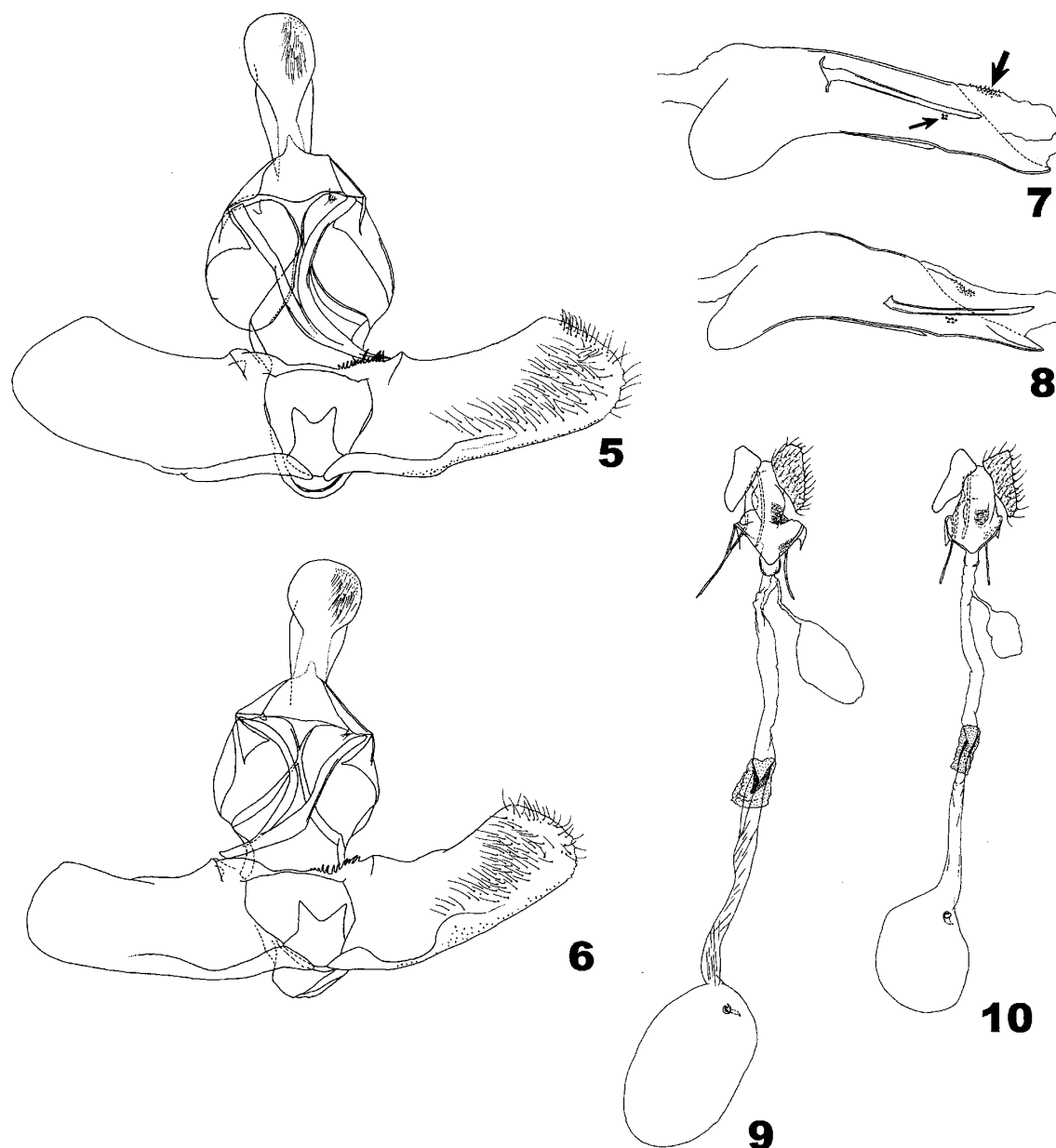
Remarks. Adults are easily attracted to light. This species has one generation per year. Kawabe (1968) redescribed the species and provided a precise photograph of the holotype. He placed the species in the genus *Heterochorista* Diakonoff, 1952. Horak (1984) placed *Heterochorista* in Sparganothini and stated that there is no close relationship between *Geogepa* and *Heterochorista*.

***Geogepa monticola* sp. n.** (Figs 3–4, 6, 8, 10)

Diagnosis. This species is similar to the preceding species, but can be distinguished from the latter by the forewing having less yellowish and more dusky ground color and by the broader and darker median fascia, the shorter uncus of the male genitalia, and the smaller lateral processes of the sterigma and the smaller ostium bursae of the female genitalia.

Male and female. Forewing length 6.5–8.5 mm in male, 7.0–8.5 mm in female. Antenna filiform, sensilla shorter in female than in male; vertex covered with brownish orange scales; labial palpus 1.5 times as long as diameter of compound eye, covered with brownish orange scales. Thorax covered with brownish orange scales; tegula covered with brownish orange scales, sometimes mixed with darker scales apically.

Forewing slender, with a slightly pointed apex; costa gently arched; termen oblique; costal fold absent; ground color light grayish ochreous, with weak fuscous reticulation; markings deep reddish brown; basal patch vestigial; median fascia distinct, broader than *G. stenochorda*, running from basal 2/5 of costa to tornus, with a crenate inner edge; discal



Figs 5–10. Male and female genitalia of *Geogepa* spp. 5–6. Male genitalia (5: *G. stenochorda*, 6: *G. monticola*, holotype). 7–8. Aedeagus of male genitalia (7: *G. stenochorda*, 8: *G. monticola*, holotype), small arrow: sockets of deciduous cornuti, large arrow: a group of minute dents. 9–10. Female genitalia (9: *G. stenochorda*, 10: *G. monticola*, paratype).

spot blackish, usually distinct; subapical patch distinct, saber-shaped; cilia light ochreous, their tornal border mixed with brownish scales. In female, forewing narrower and median fascia broader than in male. Hindwing light gray with a slight brownish hue; cilia pale ochreous in the anterior half and light gray in the posterior half. Abdomen covered with grayish scales; terminal tuft of male grayish creamy.

Male genitalia. Uncus spatulate, shorter than in *G. stenochorda*, ventral edge of its basal portion not constricted, with a short, round tip. Socius vestigial. Tegumen broad and round. Gnathos of slender, elongate arms, with an acute tip. Transtilla narrow, spinose laterally, its median third constricted. Juxta trapezoidal, constricted medially, with a deeply

invaginated tip. Vinculum narrow, simple. Valva shorter than that of *G. stenochorda*, its apex obtuse, costa straight and rather sclerotized, sacculus narrow, extending beyond half of valva. Aedeagus stout, tapering basally, with an acute, strongly sclerotized tip; vesica with a constant cornutus, some deciduous cornuti and a group of minute dents.

Female genitalia. Sterigma similar to that of *G. stenochorda*, but its lateral processes smaller, microspines on its postvaginal portion sparser, and ostium bursae relatively smaller than in *G. stenochorda*. Antrum slightly wrinkled, without colliculum. Ductus seminalis shorter than that of *G. stenochorda*, straight, bearing a large median swollen part. Corpus bursae ovate. Signum a very small plate, with a thorn-shaped process and a very small capitulum.

Holotype. ♂, Ôdarumi-tôge, Kawakami-mura, Yamanashi, 20. VII. 2001, U. Jinbo. Deposited in the National Science Museum, Tokyo. Paratypes. Nagano: Shirokoma-ike, 2,100 m, Yachiho-mura, 2 ♂ 2 ♀, 10–11. VIII. 1997, U. Jinbo, 1 ♀, 31. VII–1. VIII. 1999, U. Jinbo; Shirokoma-shindô, Kita-yatsugadake, Yachiho, 4 ♂ 4 ♀, 31. VII–1. VIII. 1999, U. Jinbo; Mugikusa-tôge, Yachiho-mura, 1 ♂, 1. VIII. 1999, M. Yamamoto; Reizen-goya, 2,130 m, Norikura, Azumi-mura, 1 ♂, 2. VIII. 2000, U. Jinbo (by light trap); Kuraigahara-sansô, 2,300 m, Norikura, Azumi-mura, 2 ♀, 1. VIII. 2000, U. Jinbo. Yamanashi: Kitazawa-tôge, Ashiyasu-mura, 2 ♀, 15. VIII. 1992, U. Jinbo; 3 ♀, 9–10. VIII. 2001, A. Sasaki. Shizuoka: Mt Arakawa-dake, 2,950 m, Akaishi Range, 1 ♂, 5. VIII. 1989, H. Nakajima; Near Arakawagoya, 2,660 m, Akaishi Range, 1 ♀, 9. VIII. 1991, H. Nakajima; Mt Senjô-dake, Akaishi Range, 1 ♀, 20. VIII. 1992, H. Nakajima; Higashimata, near Niken-goya, Akaishi Range, 4 ♀, 17. VII. 1999, U. Jinbo. 4 paratypes are deposited in the National Science Museum, Tokyo (NSMT), and remaining paratypes are now in my collection.

Distribution. Japan (Honshu).

Hosts. Unknown.

Remarks. This species is widely distributed in subalpine forests of central Honshu, and has sometimes also been collected in alpine zones. To date, this species has been collected from Chichibu, Yatsugadake, Hida, Kiso and Akaishi Mountains. Adults are attracted by light. The species has one generation per year.

Discussion

G. monticola and *G. stenochorda* are obviously sister species. They have a spatulate uncus, while the remaining species of the genus, including the type-species, have a stick-shaped uncus. In this study, a group of minute dents on the vesica was observed in both of the two Japanese *Geogepa* species. This character has been reported neither in the genus nor allied genera. Examinations of various members of *Geogepa* and allied genera are necessary to determine its phylogenetic and systematic significance.

Acknowledgments

I wish to express my sincere gratitude to Prof. Y. Kobayashi and Dr A. Shimizu for their constant encouragement and critical comments on the early draft. I thank the following entomologists for the loan or donation of valuable material and their help: Mr K. Eda, Mr N. Hirano, Mr M. Ihara, Mr N. Iizuka, the late Mr K. Jinbo, Mr T. Kaneko, the late Mr A. Kawabe, Dr H. Nakajima, Mr K. Shikata, Mr M. Yamamoto and Mr Y. Yanagita.

References

- Diakonoff, A., 1948. Microlepidoptera from Indo-China and Japan. *Bull. Mus. Hist. nat. Paris* **2**: 267–272.
- Horak, M., 1984. The Papuan tortricine genus *Heterochorista* and the systematic position of the Sparganothini. *Syst. Ent.* **9**: 383–433.
- Issiki, S., 1957. Tortricidae. In Esaki, T., Mutuura, A., Issiki, S., Inoue, H., Ogata, M. & H. Okazaki, *Icones Heterocerorum Japonicorum in Coloribus Naturalibus* [1]: 372–483, pls 12–15. Hoikusha, Osaka. (In Japanese).
- Jinbo, U., 2000. Phylogeny of the tribe Archipini (Lepidoptera, Tortricidae, Tortricinae) of Japan: Cladistic approach. *Tokyo metropol. Univ. Bull. nat. Hist.* **4**: 33–75.
- Kawabe, A., 1968. Redescription of *Heterochorista stenochorda* (Diakonoff) (Lepidoptera, Tortricidae). *Tinea* **7**: 127–128.
- , 1982. Tortricidae. In Inoue, H., Kuroko, H., Moriuti, S., Kawabe, A., Sugi, S. & M. Owada, *Moths of Japan* **1**: 62–158, **2**: 15–25, 158–183, pls 14–31, 227, 279–295. Kôdansha, Tokyo. (In Japanese).
- Kuznetsov, I. V., 2001. Tortricidae. In Ler, P. A. (Ed.), *Trichoptera and Lepidoptera. Key to the Insects of Russian Far East* **5** (3): 11–472. (In Russian).
- Liu, Y.-Q. & G. Li, 2002. Lepidoptera, Tortricidae. *Fauna sinica* (Insecta) **27**. xxviii, 463 pp., 136, 2 pls. Science Press, Beijing. (In Chinese with English summary).
- Obraztsov, N. S., 1955. Die Gattungen der palaarktischen Tortricidae. I. Allgemeine Aufteilung der Familie und die unterfamilien Tortricinae und Sparganothinae 1. Fortsetzung. *Tijdschr. Ent.* **98**: 147–228.
- Oku, T., 2003. Microlepidoptera of the Iwate Prefecture. *Trans. Iwate ent. Soc. (Suppl.)* **2**: 1–157 (in Japanese with English summary).
- Razowski, J., 1977. New Asiatic Archipina (Lepidoptera, Tortricidae). *Bull. Acad. pol. Sci. Sér. biol.* **25**: 323–329.
- , 1993. The catalogue of the species of Tortricidae (Lepidoptera). Part II: Palaearctic Sparganothini, Euliini, Ramapesiini and Archipini. *Acta zool. cracov.* **35**: 665–703.
- Yasuda, T., 1975. The Tortricinae and Sparganothinae of Japan (Lepidoptera: Tortricidae) (Part II). *Bull. Univ. Osaka Prefect. (B)* **27**: 79–253.

摘 要

日本の *Geogepa* 属とその1新種 (ハマキガ科) (神保宇嗣)

Geogepa 属は旧北区東部および東洋区より6種が知られる小さな属で、日本からは *G. stenochorda* ホシオビハマキ1種が知られていた。著者はホシオビハマキに近縁な新種 *Geogepa monticola* ミヤマオビハマキ (新称) を記載した。本種はホシオビハマキに似るが、前翅の中横線が太く濃色であること、♂交尾器のuncusが短く、根本はくびれないこと、♀交尾器のsterigma側方の突起が短く、ostium bursaeが小さいことから区別できる。本州中部亜高山帯に広く分布し、これまでに秩父山地・八ヶ岳山塊・飛騨山脈・木曽山脈・赤石山脈の標本を検討できた。日本産の2種は姉妹種関係にあると考えられる。この2種のvesicaにはヤスリ状の棘が観察されたが、この形質の系統学および分類学的重要性は今後の検討課題である。

(Accepted April 23, 2004)